

10/743, 809, 9-5-05, RFA.

| Ref # | Hits | Search Query  | DBs   | Default Operator | Plurals | Time Stamp       |
|-------|------|---|---|------------------|---------|------------------|
| L1    | 1    | "4374066".pn.   | US-PGPUB;<br>USPAT  | OR               | ON      | 2005/09/05 18:44 |
| L2    | 439  | 568/28.ccls.  | US-PGPUB;<br>USPAT  | OR               | ON      | 2005/09/05 18:44 |
| L3    | 34   | 568/28.ccls. and sulfonium                                    | US-PGPUB;<br>USPAT  | OR               | ON      | 2005/09/05 18:56 |
| L4    | 14   | 568/28.ccls. and sulfonium and sulfonyl                       | US-PGPUB;<br>USPAT  | OR               | ON      | 2005/09/05 19:03 |
| L5    | 5    | 430/921.ccls. and (sulfonium with sulfonyl)                   | US-PGPUB;<br>USPAT  | OR               | ON      | 2005/09/05 19:06 |
| L6    | 87   | 430/270.1.ccls. and (sulfonium with sulfonyl)                 | US-PGPUB;<br>USPAT  | OR               | ON      | 2005/09/05 19:07 |
| L7    | 436  | sulfonium with sulfonyl                                       | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2005/09/05 19:08 |
| L8    | 113  | sulfonium with sulfonyl and (photoacid or acid adj generator) | US-PGPUB;<br>USPAT;<br>USOCR;<br>EPO; JPO;<br>DERWENT;<br>IBM_TDB | OR               | ON      | 2005/09/05 19:08 |

10/743,809, 9-5-05, LPA

CA Reg. file struct search EG

(FILE 'HOME' ENTERED AT 20:30:06 ON 05 SEP 2005)

FILE 'REGISTRY' ENTERED AT 20:30:11 ON 05 SEP 2005

L1 STRUCTURE UPLOADED  
L2 STRUCTURE UPLOADED  
L3 STRUCTURE UPLOADED  
L4 STRUCTURE UPLOADED  
L5 4 S L1 FULL  
L6 6 S L2 FULL  
L7 2 S L3 FULL  
L8 0 S L4 FULL

FILE 'CAPLUS' ENTERED AT 20:31:55 ON 05 SEP 2005  
S L4

FILE 'REGISTRY' ENTERED AT 20:32:02 ON 05 SEP 2005  
L9 0 S L4

FILE 'CAPLUS' ENTERED AT 20:32:03 ON 05 SEP 2005  
L10 0 S L9  
L11 1 S L5

=> s l6  
L12 1 L6

=> d bib

L12 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2005:219970 CAPLUS  
DN 142:306448  
TI Onium salt compound and radiation-sensitive resin composition  
IN Yoneda, Eiji; Wang, Yong; Nishimura, Yukio  
PA Japan  
SO U.S. Pat. Appl. Publ., 85 pp.  
CODEN: USXXCO  
DT Patent  
LA English  
FAN.CNT 2

|      | PATENT NO.        | KIND | DATE     | APPLICATION NO. | DATE     |
|------|-------------------|------|----------|-----------------|----------|
| PI   | US 2005053861     | A1   | 20050310 | US 2003-743809  | 20031224 |
|      | JP 2004250427     | A2   | 20040909 | JP 2003-182089  | 20030626 |
|      | JP 2005104956     | A2   | 20050421 | JP 2003-423516  | 20031219 |
| PRAI | JP 2002-373531    | A    | 20021225 |                 |          |
|      | JP 2002-373625    | A    | 20021225 |                 |          |
|      | JP 2003-182089    | A    | 20030626 |                 |          |
|      | JP 2003-315010    | A    | 20030908 |                 |          |
| OS   | MARPAT 142:306448 |      |          |                 |          |

=> s l7  
L13 1 L7

=> d bib

L13 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2005:219970 CAPLUS  
DN 142:306448  
TI Onium salt compound and radiation-sensitive resin composition  
IN Yoneda, Eiji; Wang, Yong; Nishimura, Yukio  
PA Japan  
SO U.S. Pat. Appl. Publ., 85 pp.  
CODEN: USXXCO

10/743, 809, 9-5-05, CA REG. FILE, PEA.  
STRUCT. search.

(FILE 'HOME' ENTERED AT 17:22:23 ON 05 SEP 2005)

FILE 'REGISTRY' ENTERED AT 17:22:35 ON 05 SEP 2005

|     |                    |
|-----|--------------------|
| L1  | STRUCTURE UPLOADED |
| L2  | STRUCTURE UPLOADED |
| L3  | STRUCTURE UPLOADED |
| L4  | STRUCTURE UPLOADED |
| L5  | STRUCTURE UPLOADED |
| L6  | 0 S L1 FULL        |
| L7  | 0 S L2 FULL        |
| L8  | 7 S L3 FULL        |
| L9  | 17 S L4 FULL       |
| L10 | 2 S L5 FULL        |

FILE 'CAPLUS' ENTERED AT 17:30:44 ON 05 SEP 2005

|     |         |
|-----|---------|
| L11 | 2 S L8  |
| L12 | 9 S L9  |
| L13 | 1 S L10 |

=>

l1 = FORM 1  
l2 " 2  
l3 " 4  
l4 " 5  
l5 " 6

} FROM SPEC.

L11 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2005:219970 CAPLUS

DN 142:306448

TI Onium salt compound and radiation-sensitive resin composition

IN Yoneda, Eiji; Wang, Yong; Nishimura, Yukio

PA Japan

SO U.S. Pat. Appl. Publ., 85 pp.

CODEN: USXXCO

DT Patent

LA English

FAN.CNT 2

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | US 2005053861  | A1   | 20050310 | US 2003-743809  | 20031224 |
|      | JP 2004250427  | A2   | 20040909 | JP 2003-182089  | 20030626 |
|      | JP 2005104956  | A2   | 20050421 | JP 2003-423516  | 20031219 |
| PRAI | JP 2002-373531 | A    | 20021225 |                 |          |
|      | JP 2002-373625 | A    | 20021225 |                 |          |
|      | JP 2003-182089 | A    | 20030626 |                 |          |
|      | JP 2003-315010 | A    | 20030908 |                 |          |

OS MARPAT 142:306448

AB An onium salt compound having a cation moiety of formula I (A = I, S; m = 1 or 2; n = 0 or 1; x = 1-10; and Ar1, Ar2 = aromatic hydrocarbon group; and P = -O-SO2R, -O-S(O)R, -SO2R; R = H, (substituted) alkyl group, or a (substituted) alicyclic hydrocarbon group) is disclosed. The onium salt compound is suitable as a photoacid generator for photoresists of a pos.-tone radiation-sensitive resin composition. The pos.-tone radiation-sensitive resin composition containing this compound is useful as a chemical-amplified photoresist exhibiting high resolution at high sensitivity, responsive to various radiations, and having outstanding storage stability.

IT 753454-43-2P 847799-97-7P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(onium salt compound as photoacid generator for radiation-sensitive resin composition)

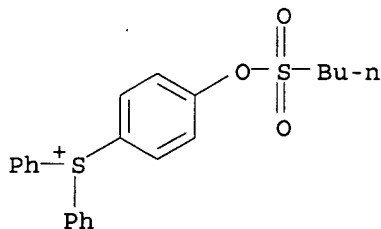
RN 753454-43-2 CAPLUS

CN Sulfonium, [4-[(butylsulfonyl)oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 753454-42-1

CMF C22 H23 O3 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 847799-97-7 CAPLUS

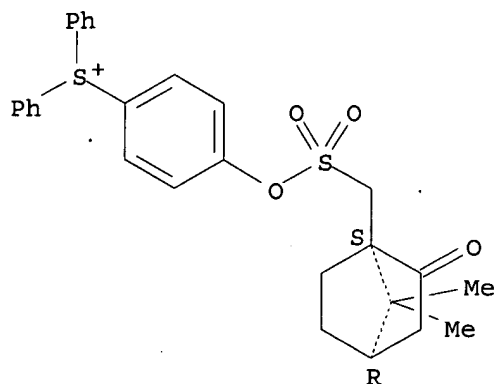
CN Sulfonium, [4-[[[(1S,4R)-7,7-dimethyl-2-oxobicyclo[2.2.1]hept-1-yl]methyl]sulfonyl]oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847799-96-6

CMF C28 H29 O4 S2

Absolute stereochemistry.



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

L11 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:741785 CAPLUS

DN 141:268555

TI Onium salts for radiation-sensitive acid generator for positive photoresist compositions

IN Yoneda, Eiji; Nishimura, Yukio; Wang, Yong

PA JSR Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 48 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 2

|      | PATENT NO.        | KIND | DATE     | APPLICATION NO. <i>myapple</i> | DATE     |
|------|-------------------|------|----------|--------------------------------|----------|
| PI   | JP 2004250427     | A2   | 20040909 | JP 2003-182089                 | 20030626 |
|      | US 2005053861     | A1   | 20050310 | US 2003-743809                 | 20031224 |
| PRAI | JP 2002-373625    | A    | 20021225 |                                |          |
|      | JP 2002-373531    | A    | 20021225 |                                |          |
|      | JP 2003-182089    | A    | 20030626 |                                |          |
|      | JP 2003-315010    | A    | 20030908 |                                |          |
| OS   | MARPAT 141:268555 |      |          |                                |          |

AB The onium salt has cationic portion represented with (Ar<sub>2</sub>)<sub>n</sub>-A<sup>+</sup>-(Ar<sub>1</sub>)<sub>m</sub>-(OZ)<sub>x</sub> ( A = I, S; m = 1,2 ; n = 0, 1; (m+n) = 2; x = integer 1-10; Ar<sub>1</sub>-2 = mono-valent C<sub>6</sub>-20 aromatic hydrocarbon, mono-valent C<sub>3</sub>-20 heterocyclic ring, 3-8 membered ring residue with Ar<sub>1</sub>, Ar<sub>2</sub>, and A; Z = -SO<sub>2</sub>R<sub>1</sub>, -S(O)R<sub>2</sub>; R<sub>1</sub>-2 = H, C<sub>1</sub>-20 alkyl, mono-valent C<sub>3</sub>-20 alicyclic, etc.). The onium salt provides photoresist composition of high sensitivity and good storageability.

IT 753454-43-2P 753454-47-6P 753454-49-8P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(onium salts for radiation-sensitive acid generator for pos. photoresist compns.)

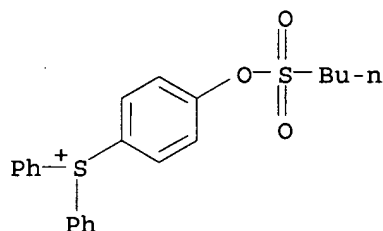
RN 753454-43-2 CAPLUS

CN Sulfonium, [4-[(butylsulfonyl)oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 753454-42-1

CMF C22 H23 O3 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

-O<sub>3</sub>S- (CF<sub>2</sub>)<sub>3</sub>-CF<sub>3</sub>

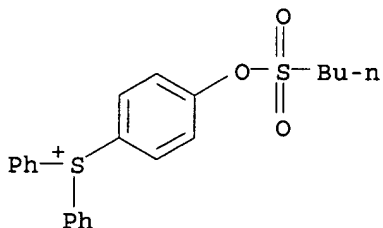
RN 753454-47-6 CAPLUS

CN Sulfonium, [4-[(butylsulfonyl)oxy]phenyl]diphenyl-, salt with α,α,β,β-tetrafluorobicyclo[2.2.1]heptane-2-ethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 753454-42-1

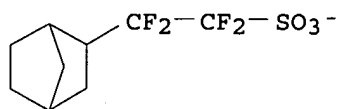
CMF C22 H23 O3 S2



CM 2

CRN 474516-37-5

CMF C9 H11 F4 O3 S



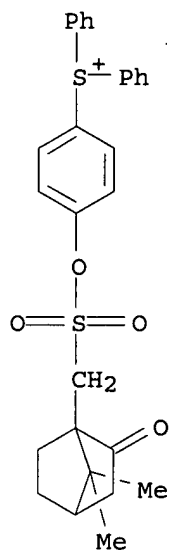
RN 753454-49-8 CAPLUS

CN Sulfonium, [4-[[[(7,7-dimethyl-2-oxobicyclo[2.2.1]hept-1-yl)methyl]sulfonyl]oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 753454-48-7

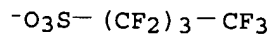
CMF C28 H29 O4 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



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L12 ANSWER 1 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2005:219970 CAPLUS  
 DN 142:306448  
 TI Onium salt compound and radiation-sensitive resin composition  
 IN Yoneda, Eiji; Wang, Yong; Nishimura, Yukio  
 PA Japan  
 SO U.S. Pat. Appl. Publ., 85 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 2

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | US 2005053861  | A1   | 20050310 | US 2003-743809  | 20031224 |
|      | JP 2004250427  | A2   | 20040909 | JP 2003-182089  | 20030626 |
|      | JP 2005104956  | A2   | 20050421 | JP 2003-423516  | 20031219 |
| PRAI | JP 2002-373531 | A    | 20021225 |                 |          |
|      | JP 2002-373625 | A    | 20021225 |                 |          |
|      | JP 2003-182089 | A    | 20030626 |                 |          |
|      | JP 2003-315010 | A    | 20030908 |                 |          |

*MJ Appl*

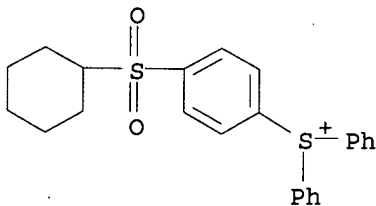
OS MARPAT 142:306448  
 AB An onium salt compound having a cation moiety of formula I (A = I, S; m = 1 or 2; n = 0 or 1; x = 1-10; and Ar1, Ar2 = aromatic hydrocarbon group; and P = -O-SO2R, -O-S(O)R, -SO2R; R = H, (substituted) alkyl group, or a (substituted) alicyclic hydrocarbon group) is disclosed. The onium salt compound is suitable as a photoacid generator for photoresists of a pos.-tone radiation-sensitive resin composition. The pos.-tone radiation-sensitive resin composition containing this compound is useful as a chemical-amplified photoresist exhibiting high resolution at high sensitivity, responsive to various radiations, and having outstanding storage stability.

IT **847800-01-5P 847800-05-9P**  
 RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (onium salt compound as photoacid generator for radiation-sensitive resin composition)

RN 847800-01-5 CAPLUS  
 CN Sulfonium, [4-(cyclohexylsulfonyl)phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butan-1-sulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847800-00-4  
 CMF C24 H25 O2 S2



CM 2

CRN 45187-15-3  
 CMF C4 F9 O3 S



$^{-}\text{O}_3\text{S}-\text{(CF}_2\text{)}_3-\text{CF}_3$

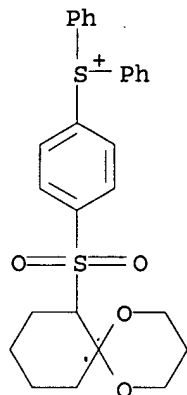
RN 847800-05-9 CAPLUS

CN Sulfonium, [4-(1,5-dioxaspiro[5.5]undec-7-ylsulfonyl)phenyl]diphenyl-,  
salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI)  
(CA INDEX NAME)

CM 1

CRN 847800-04-8

CMF C27 H29 O4 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}-\text{(CF}_2\text{)}_3-\text{CF}_3$

IT 847799-76-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)

(preparation of onium salt compound as photoacid generator for  
radiation-sensitive resin composition)

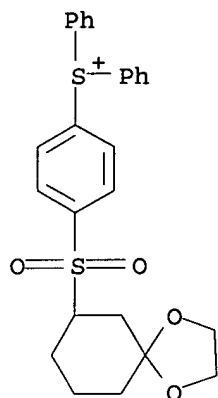
RN 847799-76-2 CAPLUS

CN Sulfonium, [4-(1,4-dioxaspiro[4.5]dec-7-ylsulfonyl)phenyl]diphenyl-, salt  
with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA  
INDEX NAME)

CM 1

CRN 847799-75-1

CMF C26 H27 O4 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

L12 ANSWER 2 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:599494 CAPLUS

DN 127:191198

TI Photoinitiators and photoinitiator compositions and photocurable hybrid resin compositions

IN Toba, Yasumasa; Tanaka, Yasuhiro; Yasuike, Madoka

PA Toyo Ink Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | JP 09183961    | A2   | 19970715 | JP 1995-342494  | 19951228 |
| PRAI | JP 1995-342494 |      | 19951228 |                 |          |

OS MARPAT 127:191198

AB The photoinitiator compns., having a high curing rate, contain sulfoxonium borates  $R_1R_2R_3S^+(O) \cdot (BX_mZn)^-$  ( $R_1-R_3$  = C6-20 aryl which may be substituted by halo, OH, NO<sub>2</sub>, CN, NH<sub>2</sub>, alkyl, alkoxy, aralkyloxy, aryl, aryloxy, aralkyl group; X = F, Cl; Z = Ph group substituted by  $\geq 2$  F, CN, NO<sub>2</sub>, CF<sub>3</sub>; m = 0-3; n = 1-4; m + n = 4). Thus, a composition containing

100

parts an epoxy resin (ERL 4221) and 3 parts triphenylsulfoxonium tetrakis(pentafluorophenyl)borate was irradiated by UV to give a cured film.

IT 194293-67-9 194293-75-9

RL: CAT (Catalyst use); USES (Uses)

(sulfoxonium borate photoinitiators and photocurable hybrid resin compns.)

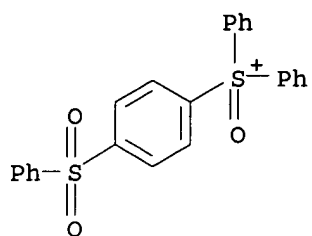
RN 194293-67-9 CAPLUS

CN Sulfoxonium, diphenyl[4-(phenylsulfonyl)phenyl]-, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 139572-76-2

CMF C24 H19 O3 S2

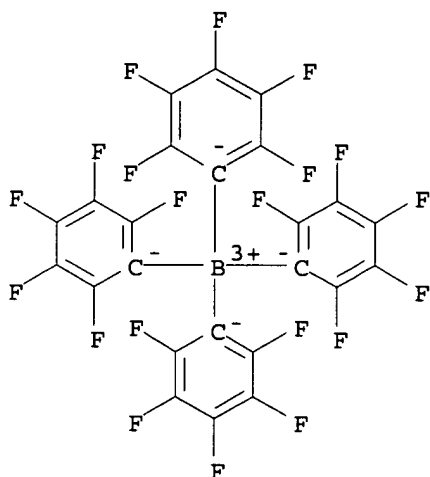


CM 2

CRN 47855-94-7

CMF C24 B F20

CCI CCS



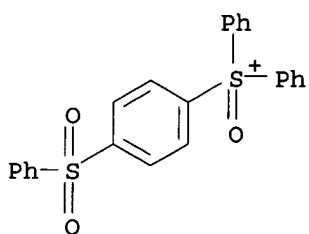
RN 194293-75-9 CAPLUS

CN Sulfoxonium, diphenyl[4-(phenylsulfonyl)phenyl]-, tetrakis[4-(trifluoromethyl)phenyl]borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 139572-76-2

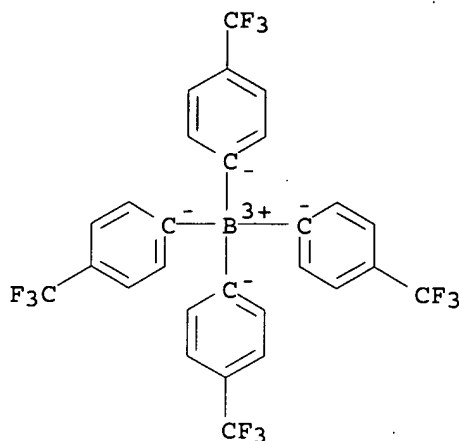
CMF C24 H19 O3 S2



CM 2

CRN 47823-82-5

CMF C28 H16 B F12  
CCI CCS



L12 ANSWER 3 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1996:256323 CAPLUS

DN 124:318806

TI Photopolymerization initiators, radiation-curable compositions, and their cured products

IN Abe, Tetsuya; Yokoshima, Minoru

PA Nippon Kayaku Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | JP 08041116    | A2   | 19960213 | JP 1994-193778  | 19940727 |
|      | JP 3424772     | B2   | 20030707 |                 |          |
| PRAI | JP 1994-193778 |      | 19940727 |                 |          |

OS MARPAT 124:318806

AB Sulfonium- and sulfoxonium-type photopolymn. initiators are synthesized and are used in radiation curable epoxy resins. Thus, compound I was oxidized with hydrogen peroxide to give compound II; II 1.5, Celloxide 2021 80, and EHPE 3150 20 parts were mixed and cured by UV to show transparency, storage stability, gloss, no odor, and tack free 23 mJ/cm<sup>2</sup>.

IT 176310-56-8P 176310-62-6P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(preparation of photopolymn. initiators and radiation-curable compns.)

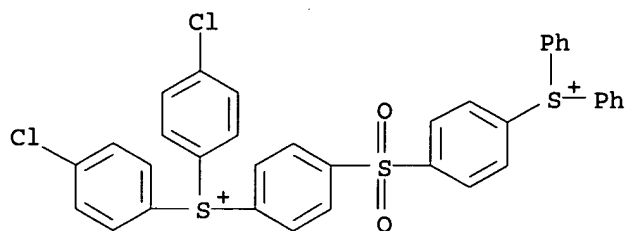
RN 176310-56-8 CAPLUS

CN Sulfonium, bis(4-chlorophenyl) [4-[[4-(diphenylsulfonio)phenyl]sulfonyl]phenyl]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 176310-55-7

CMF C36 H26 Cl2 O2 S3

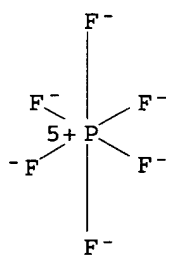


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



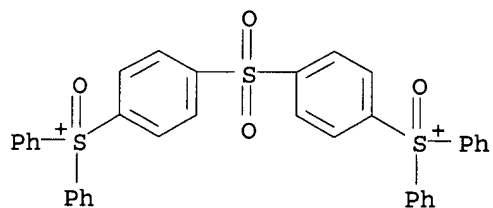
RN 176310-62-6 CAPLUS

CN Sulfoxonium, (sulfonyldi-4,1-phenylene)bis[diphenyl-,  
bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 176310-61-5

CMF C36 H28 O4 S3

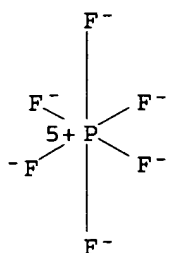


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



L12 ANSWER 4 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1992:131247 CAPLUS

DN 116:131247

TI Preparation of triarylsulfoxonium salts and their use as initiators for cationic photopolymerization

IN Irving, Edward; Taylor, David Alan; Lunn, Robert James; Innocenzi, John Paul; Haines, Alan Hugh

PA CIBA Ltd., Switz.

SO Brit. UK Pat. Appl., 24 pp.

CODEN: BAXXDU

DT Patent

LA English

FAN.CNT 1

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|------|---------------|------|----------|-----------------|----------|
| PI   | GB 2238787    | A1   | 19910612 | GB 1989-27530   | 19891206 |
|      | GB 2238787    | B2   | 19930303 |                 |          |
|      | JP 03271270   | A2   | 19911203 | JP 1990-333442  | 19901129 |
|      | DE 4038536    | A1   | 19910613 | DE 1990-4038536 | 19901203 |
|      | CA 2031428    | AA   | 19910607 | CA 1990-2031428 | 19901204 |
|      | FR 2655338    | A1   | 19910607 | FR 1990-15147   | 19901204 |
|      | FR 2655338    | B1   | 19921002 |                 |          |
|      | US 5576461    | A    | 19961119 | US 1990-622905  | 19901206 |
| PRAI | GB 1989-27530 | A    | 19891206 |                 |          |

OS MARPAT 116:131247

AB R1R2R3S+O X- [I; R1, R2, R3 = (substituted) C6-10 aryl, X = anion], useful as initiators for cationic polymerization of compds. such as diepoxides in the manufacture of coatings, are prepared by oxidation of the corresponding sulfonium

salts using a peracid under basic conditions in a nonketone solvent. Use of the basic conditions and nonketone solvent improves the yield and eliminates contamination of the product with the starting material. Thus, a solution of 5.1 g NaOH and 6.7 g 30% aqueous H2O2 solution in 50 mL water was added dropwise to 300 mL MeOH containing 5.6 g (4-MeOC6H4)Ph2SPF6 and 6.1 g p-toluenesulfonyl chloride at 15° with stirring, and the mixture was allowed to warm to room temperature overnight to give 84% yield I (R1 = 4-MeOC6H4, R2 = R3 = Ph, X = PF6) (II). Irradiation of a mixture containing

100

parts bisphenol A diglycidyl ether and 3 parts II on tin plate with a 5000-W metal halide lamp 75 cm from the plate provided a tack-free coating in 2 mins.

IT 139572-77-3P

RL: PREP (Preparation)

(manufacture of, for cationic photopolymer. catalysts)

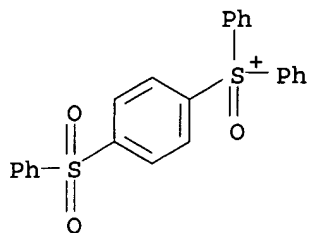
RN 139572-77-3 CAPLUS

CN Sulfoxonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluorophosphate(1-)(9CI) (CA INDEX NAME)

CM 1

CRN 139572-76-2

CMF C24 H19 O3 S2

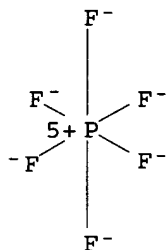


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



L12 ANSWER 5 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1985:167245 CAPLUS

DN 102:167245

TI Recent advances in thermally and photochemically initiated cationic polymerization

AU Crivello, James V.; Lee, J. L.

CS Gen. Electr. Corp. Res. and Dev., Schenectady, NY, 12301, USA

SO Polymer Journal (Tokyo, Japan) (1985), 17(1), 73-83

CODEN: POLJTB8; ISSN: 0032-3896

DT Journal

LA English

AB Classes of arylsulfonium salts are discussed which have enhanced efficiency as photoinitiators or thermal initiators of cationic polymerization. One of these compds., p-PhSC<sub>6</sub>H<sub>4</sub>SPh<sub>2</sub>+AsF<sub>6</sub><sup>-</sup> [75482-17-6], was identified as a component of the Friedel-Crafts reaction of C<sub>6</sub>H<sub>6</sub> with S<sub>2</sub>Cl<sub>2</sub>. Similar compds., of formula ArSPh<sub>2</sub>+AsF<sub>6</sub><sup>-</sup> (e.g., Ar = p-PhOC<sub>6</sub>H<sub>4</sub>, m-PhSC<sub>6</sub>H<sub>4</sub>, and p-PhSO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>) and cyclic analogs (e.g., S-phenyldibenzothiophenium hexafluoroarsenate [82617-08-1]), were also prepared and characterized. Other classes (e.g., dialkylphenacylsulfonium salts, ArCOCH<sub>2</sub>SR<sub>2</sub>+X<sup>-</sup>) are also described; one class, characterized by 4-hydroxy-3,5-dimethoxyphenyldimethylsulfonium hexafluorophosphate [95896-72-3], is especially suited as thermal initiators. The activities of the initiators were tested in the cationic polymns. of limonene dioxide, cyclohexene oxide, and styrene oxide.

IT 75482-29-0

RL: USES (Uses)

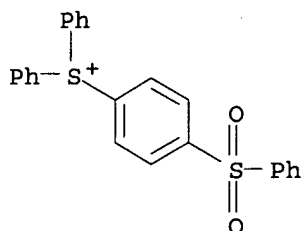
(photoinitiators, for cationic polymerization of epoxides)

RN 75482-29-0 CAPLUS

CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluoroarsenate(1-)  
(9CI) (CA INDEX NAME)

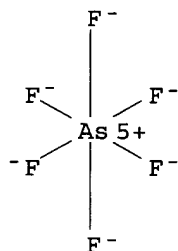
CM 1

CRN 47572-95-2  
CMF C24 H19 O2 S2



CM 2

CRN 16973-45-8  
CMF As F6  
CCI CCS



L12 ANSWER 6 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 1983:180499 CAPLUS  
DN 98:180499  
TI Triarylsulfonium salts  
IN Crivello, James V.; Lee, Julia L.  
PA General Electric Co., USA  
SO U.S., 8 pp. Cont.-in-part of U.S. Ser. No. 79,692, abandoned.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 2

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|------|---------------|------|----------|-----------------|----------|
|      | -----         | ---- | -----    | -----           | -----    |
| PI   | US 4374066    | A    | 19830215 | US 1980-200769  | 19801027 |
|      | ZA 8005273    | A    | 19811125 | ZA 1980-5273    | 19800826 |
|      | GB 2061280    | A    | 19810513 | GB 1980-29024   | 19800909 |
|      | GB 2061280    | B2   | 19840516 |                 |          |
|      | CA 1120181    | A1   | 19820316 | CA 1980-361443  | 19800925 |
|      | FR 2466457    | A1   | 19810410 | FR 1980-20689   | 19800926 |
|      | FR 2466457    | B1   | 19850308 |                 |          |
|      | JP 56055420   | A2   | 19810516 | JP 1980-133103  | 19800926 |
|      | JP 63036332   | B4   | 19880720 |                 |          |
|      | ES 495420     | A1   | 19811016 | ES 1980-495420  | 19800926 |
|      | AU 8062780    | A1   | 19810409 | AU 1980-62780   | 19800929 |
|      | AU 539699     | B2   | 19841011 |                 |          |
|      | BR 8006335    | A    | 19810414 | BR 1980-6335    | 19800929 |
| PRAI | US 1979-79692 | A2   | 19790928 |                 |          |

AB Triarylsulfonium salts such as I [75482-17-6] are prepared by a method based on the reaction of an aromatic hydrocarbon S2Cl2, and Cl in the



presence of a Friedel-Crafts catalyst. The triarylsulfonium salts are used as cationic photoinitiators to effect the deep-section cure of organic resin compns. Thus, a mixture of Ph<sub>2</sub>S [139-66-2] 37.2, AlCl<sub>3</sub> 13.34, and Cl 9.5 parts was stirred and poured onto 500 parts ice. The semisolid was washed with H<sub>2</sub>O. Then 27.8 parts AsF<sub>6</sub><sup>-</sup> K<sup>+</sup> and 500 parts H<sub>2</sub>O were added to the residue and the mixture stirred at 30° for 1 h. The product was washed with H<sub>2</sub>O then with anhydrous Et<sub>2</sub>O and dried at 60° for 16 h. The product was then recrystd. from 95% EtOH to give 31% yield of I having m.p. 77-87°. Films from a 3% solution of I in 3,4-epoxycyclohexylmethyl 3',4'-epoxycyclohexane carboxylate [2386-87-0] were radiation-cured in 1 min to a maximum thickness of 50 mils, compared with 15 mils for a similar film containing Ph<sub>3</sub>S<sup>+</sup> AsF<sub>6</sub><sup>-</sup>.

IT 75482-29-0P

RL: PREP (Preparation)

(preparation of, as photoinitiators for deep cure of polymers)

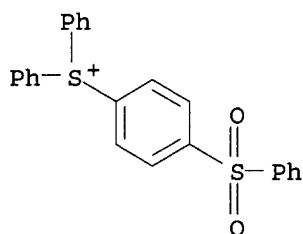
RN 75482-29-0 CAPLUS

CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluoroarsenate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 47572-95-2

CMF C24 H19 O2 S2

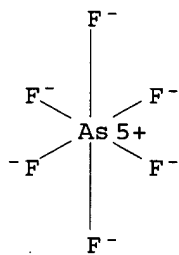


CM 2

CRN 16973-45-8

CMF As F6

CCI CCS



L12 ANSWER 7 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1981:516453 CAPLUS

DN 95:116453

TI Deep-setting photohardenable compositions

IN Crivello, James Vincent; Lam, Julia Hingwai

PA General Electric Co., USA

SO Ger. Offen., 23 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 2

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|------|---------------|------|----------|-----------------|----------|
| PI   | DE 3035807    | A1   | 19810409 | DE 1980-3035807 | 19800923 |
|      | DE 3035807    | C2   | 19930401 |                 |          |
|      | ZA 8005273    | A    | 19811125 | ZA 1980-5273    | 19800826 |
|      | GB 2061280    | A    | 19810513 | GB 1980-29024   | 19800909 |
|      | GB 2061280    | B2   | 19840516 |                 |          |
|      | CA 1120181    | A1   | 19820316 | CA 1980-361443  | 19800925 |
|      | FR 2466457    | A1   | 19810410 | FR 1980-20689   | 19800926 |
|      | FR 2466457    | B1   | 19850308 |                 |          |
|      | JP 56055420   | A2   | 19810516 | JP 1980-133103  | 19800926 |
|      | JP 63036332   | B4   | 19880720 |                 |          |
|      | ES 495420     | A1   | 19811016 | ES 1980-495420  | 19800926 |
|      | AU 8062780    | A1   | 19810409 | AU 1980-62780   | 19800929 |
|      | AU 539699     | B2   | 19841011 |                 |          |
|      | BR 8006335    | A    | 19810414 | BR 1980-6335    | 19800929 |
| PRAI | US 1979-79692 | A    | 19790928 |                 |          |

AB The sulfonium compds. 4-RC6H4S+Ph2 AsF6- (R = PhS, PhSO, or PhSO2) and 4-(PhS)C6H4S+Ph2 PF6- [75482-18-7] are useful as initiators for the polymerization of photohardenable epoxy, phenolic, vinyl, and other compds. Thus, Ph2S [139-66-2] was treated with Cl in the presence of AlCl3, and the reaction product was treated with KAsF6 [17029-22-0] to prepare 4-(PhS)C6H4S+Ph2 AsF6- (I) [75482-17-6]. A 3% solution containing 3,4-epoxycyclohexylmethyl 3,4-epoxycyclohexanecarboxylate (II) and I was hardened by UV light as a 1270-μ layer. With Ph3S+ AsF6- as the initiator instead of I, the maximum thickness of II for satisfactory hardening was 254-381 μ.

IT 75482-29-0

RL: CAT (Catalyst use); USES (Uses)  
(catalysts, for photopolymer. and photocrosslinking)

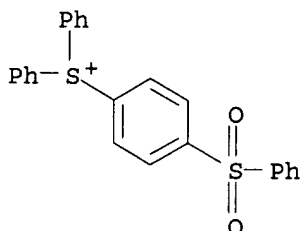
RN 75482-29-0 CAPLUS

CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluoroarsenate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 47572-95-2

CMF C24 H19 O2 S2

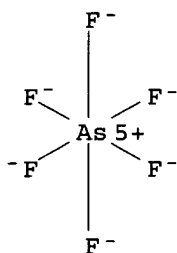


CM 2

CRN 16973-45-8

CMF As F6

CCI CCS



L12 ANSWER 8 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1980:605102 CAPLUS

DN 93:205102

TI Complex triarylsulfonium salt photoinitiators. II. The preparation of several new complex triarylsulfonium salts and the influence of their structure in photoinitiated cationic polymerization

AU Crivello, J. V.; Lam, J. H. W.

CS Gen. Electr. Corp. Res. Dev. Cent., Schenectady, NY, 12301, USA

SO Journal of Polymer Science, Polymer Chemistry Edition (1980), 18(8), 2697-714

CODEN: JPLCAT; ISSN: 0449-296X

DT Journal

LA English

AB Complex triarylsulfonium salts containing thiophenoxy chromophores were prepared

The effects of the position of the thiophenoxy group on the rate of photolysis and on the photoinitiated cationic polymerization of various monomers

were investigated. Salts in which the thiophenoxy group was oxidized to the sulfoxide and the sulfone also were prepared to examine the effects of the oxidation state of the S-bearing chromophore on the efficiencies in photoinitiated cationic polymerization. All complex salts having extended conjugation not impeded by positional isomerization or blocked by oxidation of the thiophenoxy group are more reactive than the corresponding triphenylsulfonium salts in cationic polymerization.

IT 75482-29-0

RL: CAT (Catalyst use); USES (Uses)

(catalysts, for cationic photochem. polymerization)

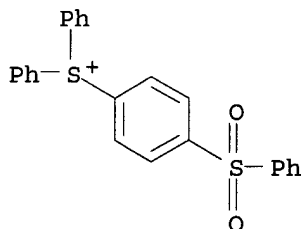
RN 75482-29-0 CAPLUS

CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluoroarsenate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 47572-95-2

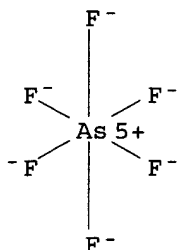
CMF C24 H19 O2 S2



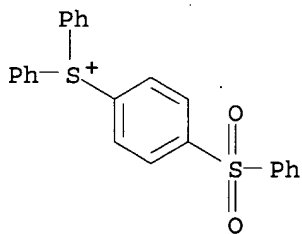
CM 2

CRN 16973-45-8

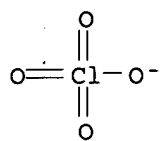
CMF As F6  
CCI CCS



L12 ANSWER 9 OF 9 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 1972:85504 CAPLUS  
DN 76:85504  
TI Electrochemistry of organic sulfur compounds. III. Novel anodic  
synthesis of a sulfonium salt from diphenyl sulfide  
AU Uneyama, Kenji; Torii, Sigeru  
CS Sch. Eng., Okayama Univ., Okayama, Japan  
SO Journal of Organic Chemistry (1972), 37(3), 367-9  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA English  
AB Ph<sub>2</sub>S, dissolved in MeCN containing LiClO<sub>4</sub>, was electrolyzed at 30° to  
give diphenyl [p-(phenylthio)phenyl] sulfonium (I), Ph<sub>2</sub>SO, and  
1,4-bis(phenylthio)benzene. Sulfonium salt I predominated in the absence  
of water, while Ph<sub>2</sub>SO increased as the concentration of H<sub>2</sub>O was raised.  
IT **32958-91-1P**  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 32958-91-1 CAPLUS  
CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, perchlorate (9CI) (CA  
INDEX NAME)  
  
CM 1  
  
CRN 47572-95-2  
CMF C24 H19 O2 S2



CM 2  
  
CRN 14797-73-0  
CMF Cl O4



=>

L13 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2005:219970 CAPLUS  
 DN 142:306448  
 TI Onium salt compound and radiation-sensitive resin composition  
 IN Yoneda, Eiji; Wang, Yong; Nishimura, Yukio  
 PA Japan  
 SO U.S. Pat. Appl. Publ., 85 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 2

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | US 2005053861  | A1   | 20050310 | US 2003-743809  | 20031224 |
|      | JP 2004250427  | A2   | 20040909 | JP 2003-182089  | 20030626 |
|      | JP 2005104956  | A2   | 20050421 | JP 2003-423518  | 20031219 |
| PRAI | JP 2002-373531 | A    | 20021225 |                 |          |
|      | JP 2002-373625 | A    | 20021225 |                 |          |
|      | JP 2003-182089 | A    | 20030626 |                 |          |
|      | JP 2003-315010 | A    | 20030908 |                 |          |

OS MARPAT 142:306448

AB An onium salt compound having a cation moiety of formula I (A = I, S; m = 1 or 2; n = 0 or 1; x = 1-10; and Ar1, Ar2 = aromatic hydrocarbon group; and P = -O-SO2R, -O-S(O)R, -SO2R; R = H, (substituted) alkyl group, or a (substituted) alicyclic hydrocarbon group) is disclosed. The onium salt compound is suitable as a photoacid generator for photoresists of a pos.-tone radiation-sensitive resin composition. The pos.-tone radiation-sensitive resin composition containing this compound is useful as a chemical-amplified photoresist exhibiting high resolution at high sensitivity, responsive to various radiations, and having outstanding storage stability.

IT 847799-76-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of onium salt compound as photoacid generator for radiation-sensitive resin composition)

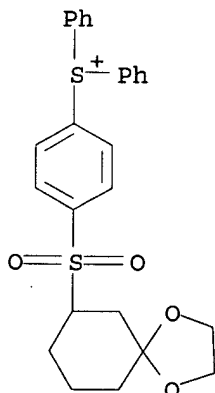
RN 847799-76-2 CAPLUS

CN Sulfonium, [4-(1,4-dioxaspiro[4.5]dec-7-ylsulfonyl)phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847799-75-1

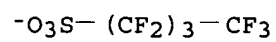
CMF C26 H27 O4 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



10/743,809, 9-6505

9/5/05, CA Reg. File, RGA  
STRUCT. search

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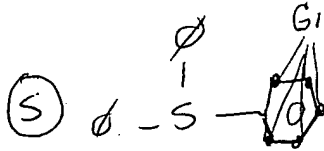
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FILE 'CAPLUS' ENTERED AT 19:14:26 ON 05 SEP 2005

L3 13 S L2

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@<sup>1</sup>  
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@<sup>2</sup>  
SO<sub>2</sub>  
@<sup>3</sup>  
O-S

VPA.

$$G_1 = @^1 - @^3$$



L3 ANSWER 1 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2005:219970 CAPLUS  
 DN 142:306448  
 TI Onium salt compound and radiation-sensitive resin composition  
 IN Yoneda, Eiji; Wang, Yong; Nishimura, Yukio  
 PA Japan  
 SO U.S. Pat. Appl. Publ., 85 pp.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 FAN.CNT 2

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | US 2005053861  | A1   | 20050310 | US 2003-743809  | 20031224 |
|      | JP 2004250427  | A2   | 20040909 | JP 2003-182089  | 20030626 |
|      | JP 2005104956  | A2   | 20050421 | JP 2003-423516  | 20031219 |
| PRAI | JP 2002-373531 | A    | 20021225 |                 |          |
|      | JP 2002-373625 | A    | 20021225 |                 |          |
|      | JP 2003-182089 | A    | 20030626 |                 |          |
|      | JP 2003-315010 | A    | 20030908 |                 |          |

OS MARPAT 142:306448  
 AB An onium salt compound having a cation moiety of formula I (A = I, S; m = 1 or 2; n = 0 or 1; x = 1-10; and Ar1, Ar2 = aromatic hydrocarbon group; and P = -O-SO2R, -O-S(O)R, -SO2R; R = H, (substituted) alkyl group, or a (substituted) alicyclic hydrocarbon group) is disclosed. The onium salt compound is suitable as a photoacid generator for photoresists of a pos.-tone radiation-sensitive resin composition. The pos.-tone radiation-sensitive resin composition containing this compound is useful as a chemical-amplified photoresist exhibiting high resolution at high sensitivity, responsive to various radiations, and having outstanding storage stability.

IT 753454-43-2P 753454-51-2P 847799-93-3P  
 847799-95-5P 847799-97-7P 847799-99-9P  
 847800-01-5P 847800-03-7P 847800-05-9P  
 847800-07-1P 847800-09-3P 847800-11-7P  
 847800-12-8P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (onium salt compound as photoacid generator for radiation-sensitive resin composition)

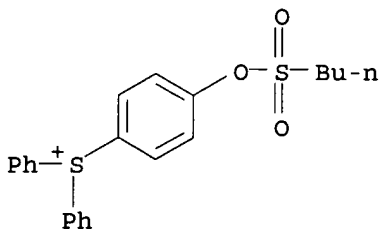
RN 753454-43-2 CAPLUS

CN Sulfonium, [4-[(butylsulfonyl)oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

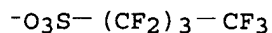
CRN 753454-42-1

CMF C22 H23 O3 S2



CM 2

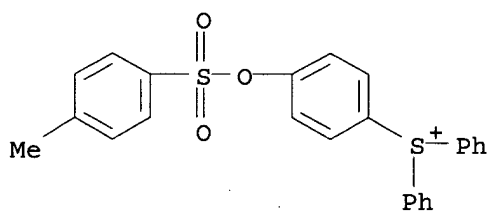
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 753454-51-2 CAPLUS  
CN Sulfonium, [4-[[[(4-methylphenyl)sulfonyl]oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

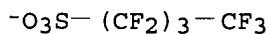
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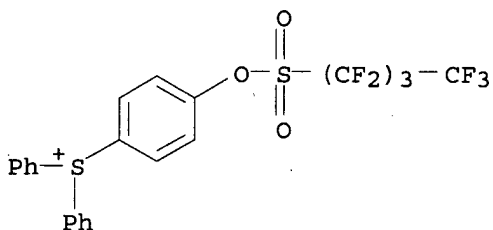
CRN 45187-15-3  
CMF C4 F9 O3 S



RN 847799-93-3 CAPLUS  
CN Sulfonium, [4-[[[(nonafluorobutyl)sulfonyl]oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

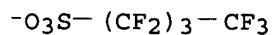
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CRN 847799-92-2  
CMF C22 H14 F9 O3 S2



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S



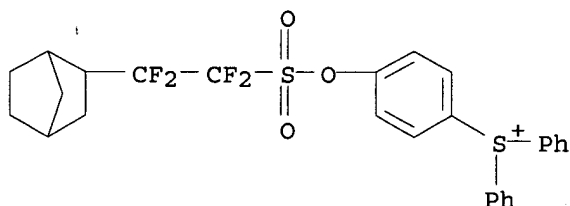
RN 847799-95-5 CAPLUS

CN Sulfonium, [4-[[[(2-bicyclo[2.2.1]hept-2-yl-1,1,2,2-tetrafluoroethyl)sulfonyl]oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847799-94-4

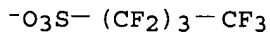
CMF C27 H25 F4 O3 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



RN 847799-97-7 CAPLUS

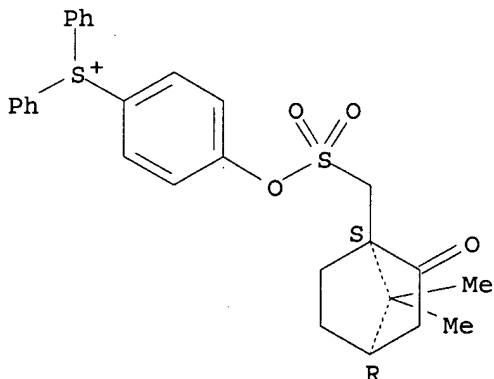
CN Sulfonium, [4-[[[[(1S,4R)-7,7-dimethyl-2-oxobicyclo[2.2.1]hept-1-yl]methyl]sulfonyl]oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847799-96-6

CMF C28 H29 O4 S2

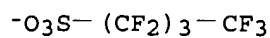
Absolute stereochemistry.



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



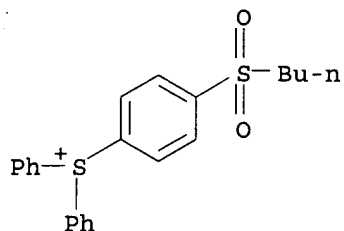
RN 847799-99-9 CAPLUS

CN Sulfonium, [4-(butylsulfonyl)phenyl]diphenyl-, salt with  
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX  
NAME)

CM 1

CRN 847799-98-8

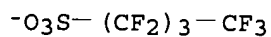
CMF C22 H23 O2 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



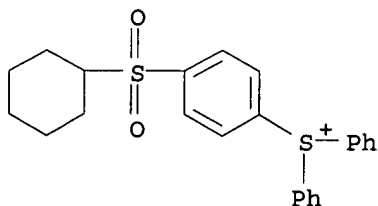
RN 847800-01-5 CAPLUS

CN Sulfonium, [4-(cyclohexylsulfonyl)phenyl]diphenyl-, salt with  
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX  
NAME)

CM 1

CRN 847800-00-4

CMF C24 H25 O2 S2



CM 2

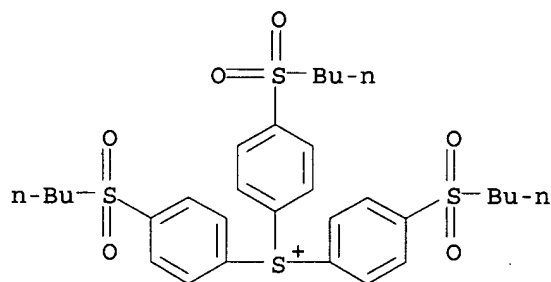
CRN 45187-15-3  
CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 847800-03-7 CAPLUS  
CN Sulfonium, tris[4-(butylsulfonyl)phenyl]-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847800-02-6  
CMF C30 H39 O6 S4



CM 2

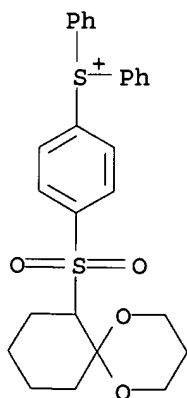
CRN 45187-15-3  
CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 847800-05-9 CAPLUS  
CN Sulfonium, [4-(1,5-dioxaspiro[5.5]undec-7-ylsulfonyl)phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

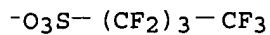
CRN 847800-04-8  
CMF C27 H29 O4 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



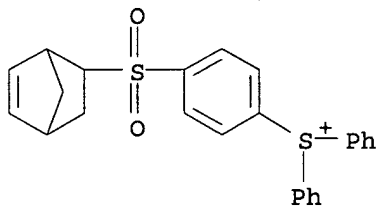
RN 847800-07-1 CAPLUS

CN Sulfonium, [4-(bicyclo[2.2.1]hept-5-en-2-ylsulfonyl)phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847800-06-0

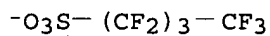
CMF C25 H23 O2 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S



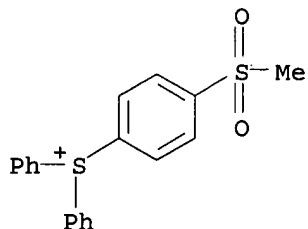
RN 847800-09-3 CAPLUS

CN Sulfonium, [4-(methylsulfonyl)phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847800-08-2

CMF C19 H17 O2 S2



CM 2

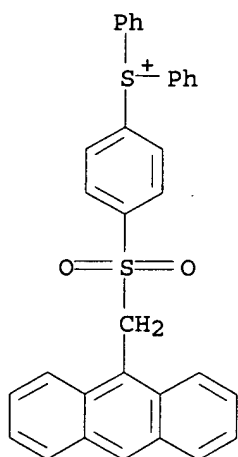
CRN 45187-15-3  
CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 847800-11-7 CAPLUS  
CN Sulfonium, [4-[(9-anthracenylmethyl)sulfonyl]phenyl]diphenyl-, salt with  
1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX  
NAME)

CM 1

CRN 847800-10-6  
CMF C33 H25 O2 S2



CM 2

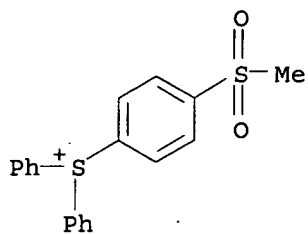
CRN 45187-15-3  
CMF C4 F9 O3 S

$^{-}\text{O}_3\text{S}- (\text{CF}_2)_3-\text{CF}_3$

RN 847800-12-8 CAPLUS  
CN Sulfonium, [4-(methylsulfonyl)phenyl]diphenyl-, salt with  
 $\alpha,\alpha,\beta,\beta$ -tetrafluorobicyclo[2.2.1]heptane-2-  
ethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

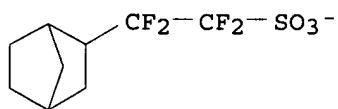
CRN 847800-08-2  
CMF C19 H17 O2 S2



CM 2

CRN 474516-37-5

CMF C9 H11 F4 O3 S



IT 847799-76-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of onium salt compound as photoacid generator for radiation-sensitive resin composition)

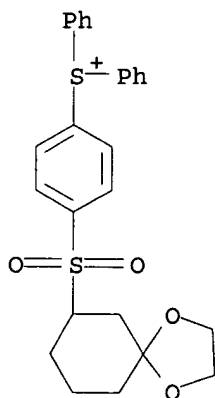
RN 847799-76-2 CAPLUS

CN Sulfonium, [4-(1,4-dioxaspiro[4.5]dec-7-ylsulfonyl)phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 847799-75-1

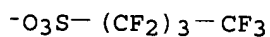
CMF C26 H27 O4 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S





L3 ANSWER 2 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:741785 CAPLUS

DN 141:268555

TI Onium salts for radiation-sensitive acid generator for positive photoresist compositions

IN Yoneda, Eiji; Nishimura, Yukio; Wang, Yong

PA JSR Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 48 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 2

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | JP 2004250427  | A2   | 20040909 | JP 2003-182089  | 20030626 |
|      | US 2005053861  | A1   | 20050310 | US 2003-743809  | 20031224 |
| PRAI | JP 2002-373625 | A    | 20021225 |                 |          |
|      | JP 2002-373531 | A    | 20021225 |                 |          |
|      | JP 2003-182089 | A    | 20030626 |                 |          |
|      | JP 2003-315010 | A    | 20030908 |                 |          |

OS MARPAT 141:268555

AB The onium salt has cationic portion represented with (Ar<sub>2</sub>)<sub>n</sub>-A<sup>+</sup>-(Ar<sub>1</sub>)<sub>m</sub>-(OZ)<sub>x</sub> (A = I, S; m = 1, 2; n = 0, 1; (m+n) = 2; x = integer 1-10; Ar<sub>1</sub>-2 = mono-valent C<sub>6</sub>-20 aromatic hydrocarbon, mono-valent C<sub>3</sub>-20 heterocyclic ring, 3-8 membered ring residue with Ar<sub>1</sub>, Ar<sub>2</sub>, and A; Z = -SO<sub>2</sub>R<sub>1</sub>, -S(O)R<sub>2</sub>; R<sub>1</sub>-2 = H, C<sub>1</sub>-20 alkyl, mono-valent C<sub>3</sub>-20 alicyclic, etc.). The onium salt provides photoresist composition of high sensitivity and good storageability.

IT 753454-43-2P 753454-45-4P 753454-47-6P

753454-49-8P 753454-51-2P

RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(onium salts for radiation-sensitive acid generator for pos. photoresist compns.)

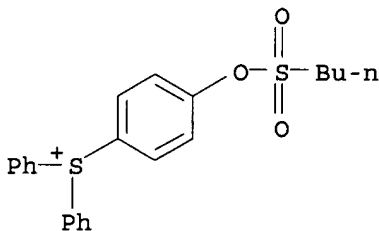
RN 753454-43-2 CAPLUS

CN Sulfonium, [4-[(butylsulfonyl)oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 753454-42-1

CMF C22 H23 O3 S2



CM 2

CRN 45187-15-3

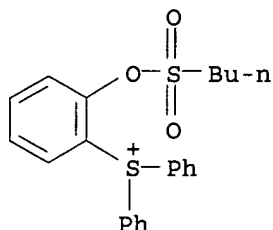
CMF C4 F9 O3 S

-O<sub>3</sub>S- (CF<sub>2</sub>)<sub>3</sub>-CF<sub>3</sub>

RN 753454-45-4 CAPLUS  
 CN Sulfonium, [2-[(butylsulfonyl)oxy]phenyl]diphenyl-, salt with  
 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX  
 NAME)

CM 1

CRN 753454-44-3  
 CMF C22 H23 O3 S2



CM 2

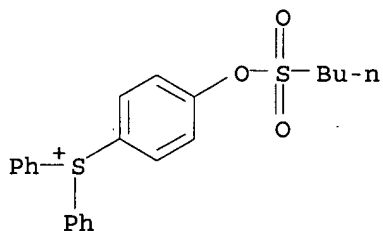
CRN 45187-15-3  
 CMF C4 F9 O3 S

$-\text{O}_3\text{S}^-(\text{CF}_2)_3-\text{CF}_3$

RN 753454-47-6 CAPLUS  
 CN Sulfonium, [4-[(butylsulfonyl)oxy]phenyl]diphenyl-, salt with  
 $\alpha,\alpha,\beta,\beta$ -tetrafluorobicyclo[2.2.1]heptane-2-  
 ethanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

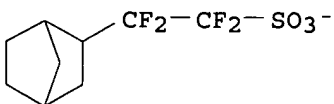
CM 1

CRN 753454-42-1  
 CMF C22 H23 O3 S2



CM 2

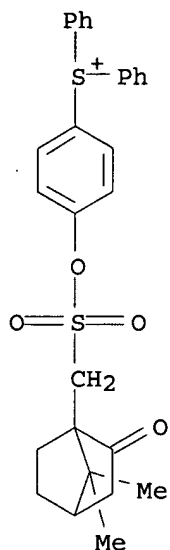
CRN 474516-37-5  
 CMF C9 H11 F4 O3 S



RN 753454-49-8 CAPLUS  
 CN Sulfonium, [4-[[[(7,7-dimethyl-2-oxobicyclo[2.2.1]hept-1-yl)methyl]sulfonyl]oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

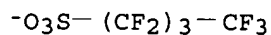
CM 1

CRN 753454-48-7  
 CMF C28 H29 O4 S2



CM 2

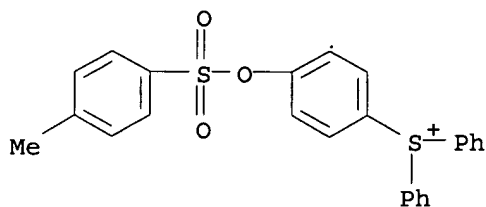
CRN 45187-15-3  
 CMF C4 F9 O3 S



RN 753454-51-2 CAPLUS  
 CN Sulfonium, [4-[[[(4-methylphenyl)sulfonyl]oxy]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 753454-50-1  
 CMF C25 H21 O3 S2



CM 2

CRN 45187-15-3  
CMF C4 F9 O3 S

-O<sub>3</sub>S- (CF<sub>2</sub>)<sub>3</sub>-CF<sub>3</sub>

L3 ANSWER 3 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2003:853314 CAPLUS  
DN 139:343479  
TI Sulfonium compounds as radiation-sensitive acid generators and resist compositions containing them  
IN Kodama, Kunihiro  
PA Fuji Photo Film Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 66 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

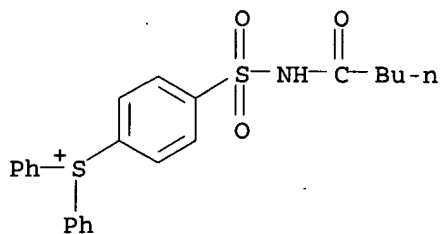
|      | PATENT NO.        | KIND | DATE     | APPLICATION NO. | DATE     |
|------|-------------------|------|----------|-----------------|----------|
| PI   | JP 2003307839     | A2   | 20031031 | JP 2002-112372  | 20020415 |
| PRAI | JP 2002-112372    |      | 20020415 |                 |          |
| OS   | MARPAT 139:343479 |      |          |                 |          |

AB (Ba)mAaS+Y1Y2 X- (I; Y1, Y2 = alkyl, aryl, aralkyl, heterocyclyl, oxoalkyl, oxoaralkyl; Y1 and Y2 may be bonded together to form a ring; Aa = direct bond, organic group; Ba = group having CONRa or SO<sub>2</sub>NRa; Ra = H, alkyl; m = 1-3; X- = nonnucleophilic anion), which generate acids upon irradiation with actinic ray or radiation, are claimed. Also claimed are resist compns. containing I, pos.-working resist compns. containing I and resins which are decomposed by acids to show increased solubility to an alkaline developer, neg.-working resist compns. containing I, water-insol. alkali-soluble resins, and crosslinking agents which crosslink to the alkali-soluble resins by acids, etc. The resist compns. containing I show high sensitivity, resolution, and good profile, and are especially suitable for irradiation with far-UV and electron beam.

IT 617692-49-6  
RL: CAT (Catalyst use); USES (Uses)  
(preparation of sulfonium compds. having amide or sulfonamide linkage as radiation-sensitive acid generators and resist compns. containing them)  
RN 617692-49-6 CAPLUS  
CN Sulfonium, [4-[[[(1-oxopentyl)amino]sulfonyl]phenyl]diphenyl-, salt with 1,1,2,2,3,3,4,4,4-nonafluoro-1-butanefluorobutanesulfonic acid (1:1) (9CI) (CA INDEX NAME)

CM 1

CRN 617692-48-5  
CMF C23 H24 N O3 S2



CM 2

CRN 45187-15-3

CMF C4 F9 O3 S

$^{-}O_3S-(CF_2)_3-CF_3$

L3 ANSWER 4 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1997:599494 CAPLUS

DN 127:191198

TI Photoinitiators and photoinitiator compositions and photocurable hybrid resin compositions

IN Toba, Yasumasa; Tanaka, Yasuhiro; Yasuike, Madoka

PA Toyo Ink Mfg. Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 31 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | JP 09183961    | A2   | 19970715 | JP 1995-342494  | 19951228 |
| PRAI | JP 1995-342494 |      | 19951228 |                 |          |

OS MARPAT 127:191198

AB The photoinitiator compns., having a high curing rate, contain sulfoxonium borates  $R_1R_2R_3S^+(O) \cdot (BX_mZn)^-$  ( $R_1-R_3$  = C6-20 aryl which may be substituted by halo, OH, NO<sub>2</sub>, CN, NH<sub>2</sub>, alkyl, alkoxy, aralkyloxy, aryl, aryloxy, aralkyl group; X = F, Cl; Z = Ph group substituted by  $\geq 2$  F, CN, NO<sub>2</sub>, CF<sub>3</sub>; m = 0-3; n = 1-4; m + n = 4). Thus, a composition containing

100 parts an epoxy resin (ERL 4221) and 3 parts triphenylsulfoxonium tetrakis(pentafluorophenyl)borate was irradiated by UV to give a cured film.

IT 194293-67-9 194293-75-9

RL: CAT (Catalyst use); USES (Uses)

(sulfoxonium borate photoinitiators and photocurable hybrid resin compns.)

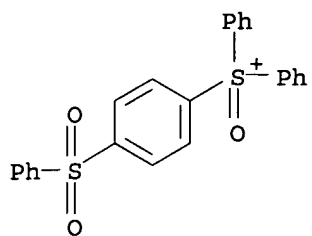
RN 194293-67-9 CAPLUS

CN Sulfoxonium, diphenyl[4-(phenylsulfonyl)phenyl]-, tetrakis(pentafluorophenyl)borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 139572-76-2

CMF C24 H19 O3 S2

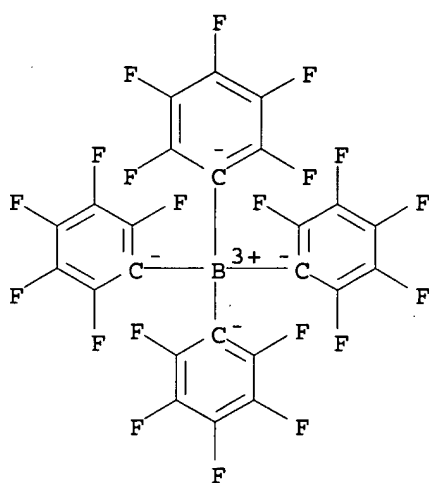


CM 2

CRN 47855-94-7

CMF C24 B F20

CCI CCS



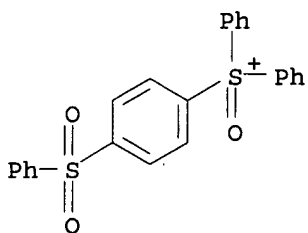
RN 194293-75-9 CAPLUS

CN Sulfoxonium, diphenyl[4-(phenylsulfonyl)phenyl]-, tetrakis[4-(trifluoromethyl)phenyl]borate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 139572-76-2

CMF C24 H19 O3 S2

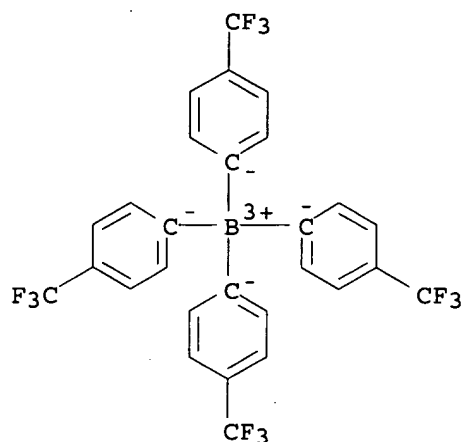


CM 2

CRN 47823-82-5

CMF C28 H16 B F12

CCI CCS



L3 ANSWER 5 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN

AN 1996:256323 CAPLUS

DN 124:318806

TI Photopolymerization initiators, radiation-curable compositions, and their cured products

IN Abe, Tetsuya; Yokoshima, Minoru

PA Nippon Kayaku Kk, Japan

SO Jpn. Kokai Tokkyo Koho, 13 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN. CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | JP 08041116    | A2   | 19960213 | JP 1994-193778  | 19940727 |
|      | JP 3424772     | B2   | 20030707 |                 |          |
| PRAI | JP 1994-193778 |      | 19940727 |                 |          |

OS MARPAT 124:318806

AB Sulfonium- and sulfoxonium-type photopolymerization initiators are synthesized and are used in radiation curable epoxy resins. Thus, compound I was oxidized with hydrogen peroxide to give compound II; II 1.5, Celloxide 2021 80, and EHPE 3150 20 parts were mixed and cured by UV to show transparency, storage stability, gloss, no odor, and tack free 23 mJ/cm<sup>2</sup>.

IT 176310-56-8P 176310-58-0P 176310-62-6P

176310-64-8P 176310-66-0P

RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)

(preparation of photopolymerization initiators and radiation-curable compns.)

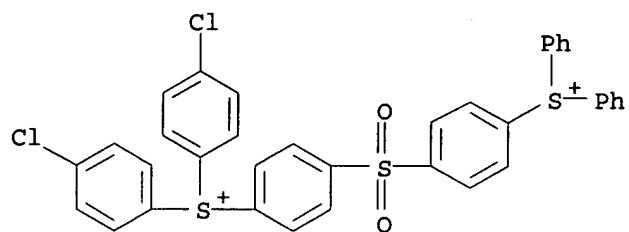
RN 176310-56-8 CAPLUS

CN Sulfonium, bis(4-chlorophenyl) [4-[[4-(diphenylsulfonio)phenyl]sulfonyl]phenyl]-, bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 176310-55-7

CMF C36 H26 Cl2 O2 S3

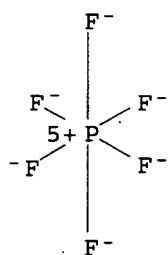


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS



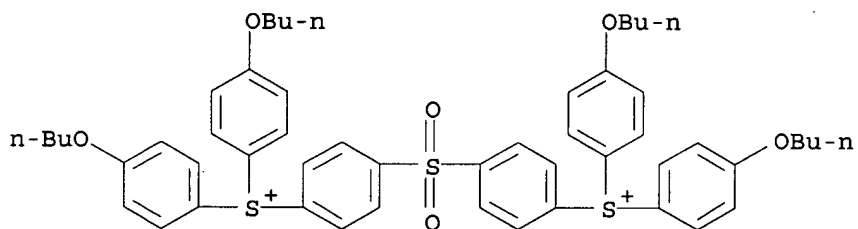
RN 176310-58-0 CAPLUS

CN Sulfonium, (sulfonyldi-4,1-phenylene)bis[bis(4-butoxyphenyl)-, bis[(OC-6-11)-hexafluoroantimonate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 176310-57-9

CMF C52 H60 O6 S3



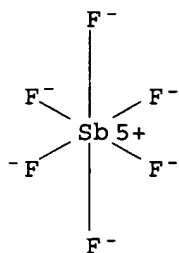
CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS

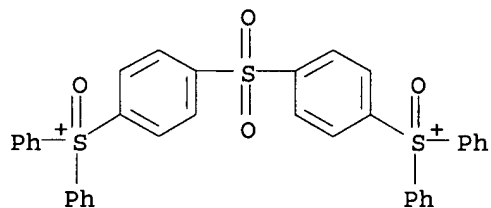




RN 176310-62-6 CAPLUS  
 CN Sulfoxonium, (sulfonyldi-4,1-phenylene)bis[diphenyl-,  
 bis[hexafluorophosphate(1-)] (9CI) (CA INDEX NAME)

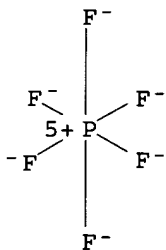
CM 1

CRN 176310-61-5  
 CMF C36 H28 O4 S3



CM 2

CRN 16919-18-9  
 CMF F6 P  
 CCI CCS

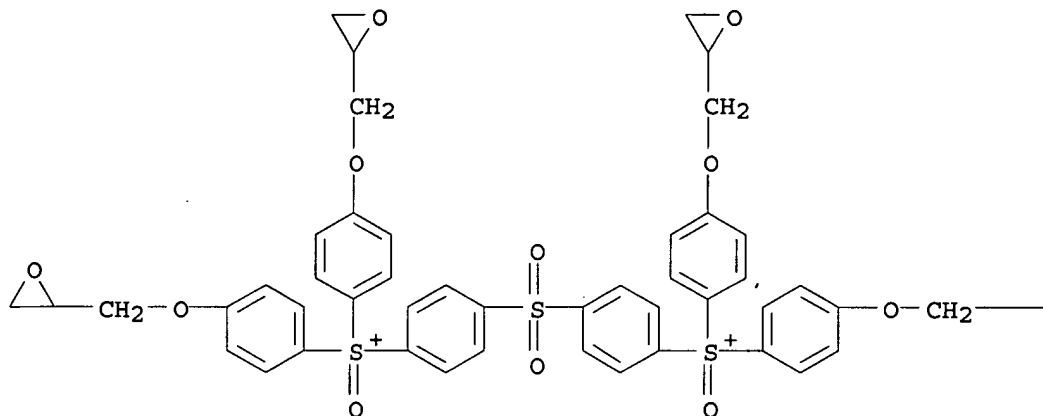


RN 176310-64-8 CAPLUS  
 CN Sulfoxonium, (sulfonyldi-4,1-phenylene)bis[bis[4-(oxiranylmethoxy)phenyl]-,  
 bis[(OC-6-11)-hexafluoroantimonate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 176310-63-7  
 CMF C48 H44 O12 S3

PAGE 1-A



PAGE 1-B

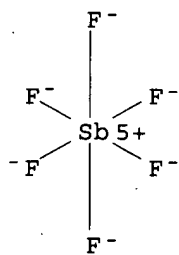


CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



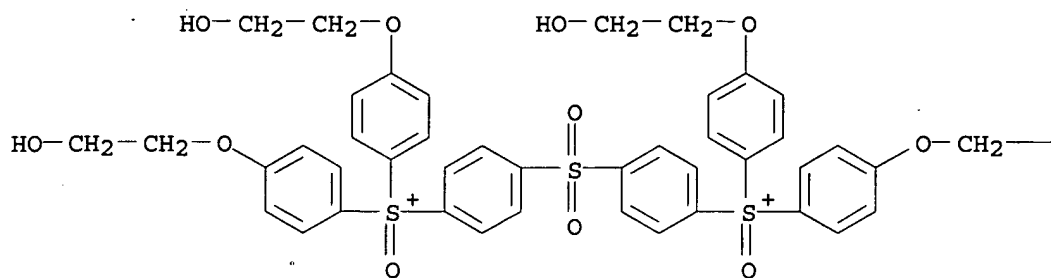
RN 176310-66-0 CAPLUS

CN Sulfoxonium, (sulfonyldi-4,1-phenylene)bis[bis[4-(2-hydroxyethoxy)phenyl]-, bis[(OC-6-11)-hexafluoroantimonate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 176310-65-9

CMF C44 H44 O12 S3



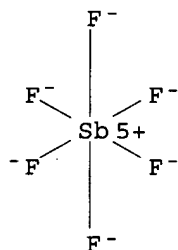
—CH<sub>2</sub>—OH

CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



IT 176310-52-4P 176310-60-4P

RL: CAT (Catalyst use); IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent); USES (Uses)  
(preparation of photopolymn. initiators and radiation-curable compns.)

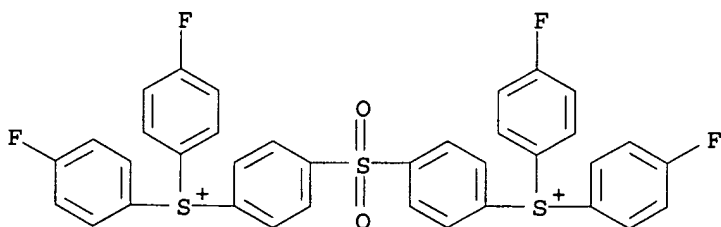
RN 176310-52-4 CAPLUS

CN Sulfonium, (sulfonyldi-4,1-phenylene)bis[bis(4-fluorophenyl)-, bis[(OC-6-11)-hexafluoroantimonate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 176310-51-3

CMF C36 H24 F4 O2 S3

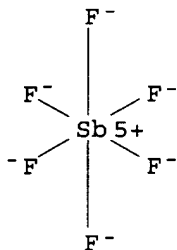


CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



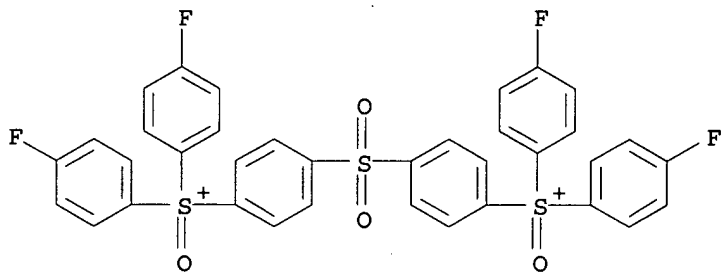
RN 176310-60-4 CAPLUS

CN Sulfoxonium, (sulfonyldi-4,1-phenylene)bis[bis(4-fluorophenyl)-, bis[(OC-6-11)-hexafluoroantimonate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 176310-59-1

CMF C36 H24 F4 O4 S3

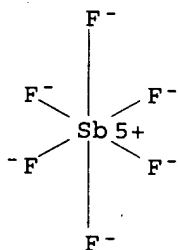


CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



L3 ANSWER 6 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 1996:256143 CAPLUS  
DN 124:292462

TI Cationic photoinitiators and photocurable compositions and cured products  
 IN Abe, Tetsuya; Yokoshima, Minoru  
 PA Nippon Kayaku Kk, Japan  
 SO Jpn. Kokai Tokkyo Koho, 14 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN. CNT 1

|      | PATENT NO.     | KIND | DATE     | APPLICATION NO. | DATE     |
|------|----------------|------|----------|-----------------|----------|
| PI   | JP 08027209    | A2   | 19960130 | JP 1994-189079  | 19940720 |
|      | JP 3424771     | B2   | 20030707 |                 |          |
| PRAI | JP 1994-189079 |      | 19940720 |                 |          |

OS MARPAT 124:292462

AB The compns. useful for ink and coating applications, and giving odorless cured products with good gloss, comprise cationically polymerizable compds., and specific sulfonium compds. or sulfoxonium compds. as photoinitiators. Thus, a composition containing

PhCO-p-C6H4SO2-p-C6H4S+(C6H4-p-F)2·PF6- 1.5, Celloxide 2021 (alicyclic epoxy resin) 2021 80, and EHPE 3150 (alicyclic epoxy resin) 20 parts was applied on an Al test panel, and irradiated by UV to give coatings with good gloss.

IT 175840-84-3P 175840-92-3P 175840-94-5P

RL: CAT (Catalyst use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)

(sulfonium and sulfoxonium compds. as cationic photoinitiators and photocurable compns. and cured products)

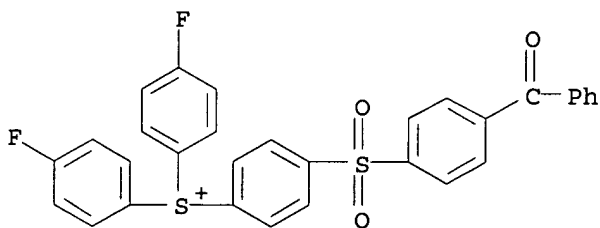
RN 175840-84-3 CAPLUS

CN Sulfonium, [4-[(4-benzoylphenyl)sulfonyl]phenyl]bis(4-fluorophenyl)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

CM 1

CRN 175840-83-2

CMF C31 H21 F2 O3 S2

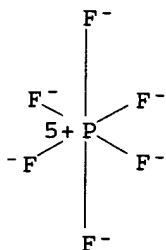


CM 2

CRN 16919-18-9

CMF F6 P

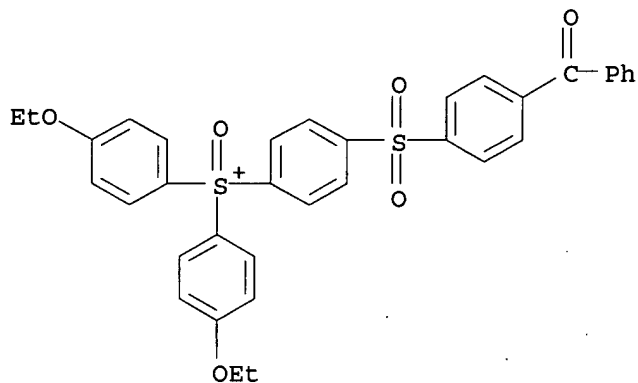
CCI CCS



RN 175840-92-3 CAPLUS  
 CN Sulfoxonium, [4-[(4-benzoylphenyl)sulfonyl]phenyl]bis(4-ethoxyphenyl)-, hexafluorophosphate(1-) (9CI) (CA INDEX NAME)

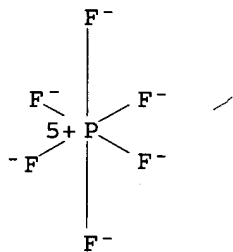
CM 1

CRN 175840-91-2  
 CMF C35 H31 O6 S2



CM 2

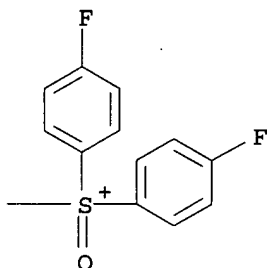
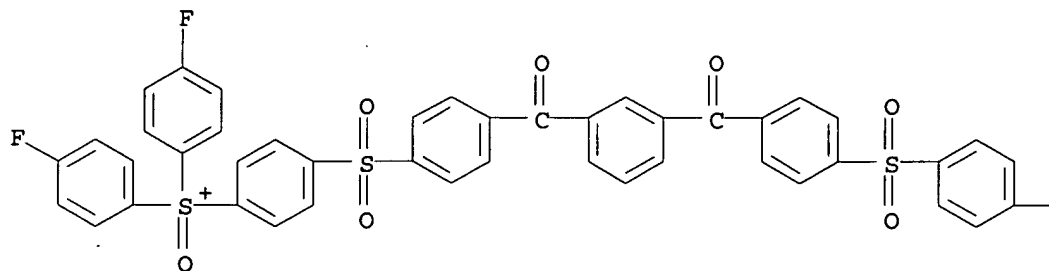
CRN 16919-18-9  
 CMF F6 P  
 CCI CCS



RN 175840-94-5 CAPLUS  
 CN Sulfoxonium, [1,3-phenylenebis(carbonyl-4,1-phenylenesulfonyl-4,1-phenylene)]bis[bis(4-fluorophenyl)-, bis[(OC-6-11)-hexafluoroantimonate(1-)] (9CI) (CA INDEX NAME)

CM 1

CRN 175840-93-4  
 CMF C56 H36 F4 O8 S4

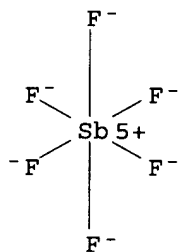


CM 2

CRN 17111-95-4

CMF F6 Sb

CCI CCS



L3 ANSWER 7 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1992:131247 CAPLUS  
 DN 116:131247  
 TI Preparation of triarylsulfoxonium salts and their use as initiators for  
 cationic photopolymerization  
 IN Irving, Edward; Taylor, David Alan; Lunn, Robert James; Innocenzi, John  
 Paul; Haines, Alan Hugh  
 PA CIBA Ltd., Switz.  
 SO Brit. UK Pat. Appl., 24 pp.  
 CODEN: BAXXDU  
 DT Patent  
 LA English  
 FAN.CNT 1

|    | PATENT NO. | KIND | DATE     | APPLICATION NO. | DATE     |
|----|------------|------|----------|-----------------|----------|
| PI | GB 2238787 | A1   | 19910612 | GB 1989-27530   | 19891206 |
|    | GB 2238787 | B2   | 19930303 |                 |          |

|                    |    |          |                 |          |
|--------------------|----|----------|-----------------|----------|
| JP 03271270        | A2 | 19911203 | JP 1990-333442  | 19901129 |
| DE 4038536         | A1 | 19910613 | DE 1990-4038536 | 19901203 |
| CA 2031428         | AA | 19910607 | CA 1990-2031428 | 19901204 |
| FR 2655338         | A1 | 19910607 | FR 1990-15147   | 19901204 |
| FR 2655338         | B1 | 19921002 |                 |          |
| US 5576461         | A  | 19961119 | US 1990-622905  | 19901206 |
| PRAI GB 1989-27530 | A  | 19891206 |                 |          |

OS MARPAT 116:131247

AB R1R2R3S+O X- [I; R1, R2, R3 = (substituted) C6-10 aryl, X = anion], useful as initiators for cationic polymerization of compds. such as diepoxides in the manufacture of coatings, are prepared by oxidation of the corresponding sulfonium

salts using a peracid under basic conditions in a nonketone solvent. Use of the basic conditions and nonketone solvent improves the yield and eliminates contamination of the product with the starting material. Thus, a solution of 5.1 g NaOH and 6.7 g 30% aqueous H2O2 solution in 50 mL water was added dropwise to 300 mL MeOH containing 5.6 g (4-MeOC6H4)Ph2SPF6 and 6.1 g p-toluenesulfonyl chloride at 15° with stirring, and the mixture was allowed to warm to room temperature overnight to give 84% yield I (R1 = 4-MeOC6H4, R2 = R3 = Ph, X = PF6) (II). Irradiation of a mixture containing

100

parts bisphenol A diglycidyl ether and 3 parts II on tin plate with a 5000-W metal halide lamp 75 cm from the plate provided a tack-free coating in 2 mins.

IT 139572-77-3P 139572-79-5P

RL: PREP (Preparation)

(manufacture of, for cationic photopolymer. catalysts)

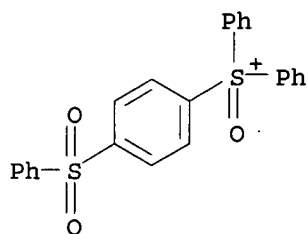
RN 139572-77-3 CAPLUS

CN Sulfoxonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluorophosphate(1-)  
(9CI) (CA INDEX NAME)

CM 1

CRN 139572-76-2

CMF C24 H19 O3 S2

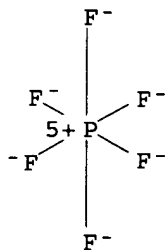


CM 2

CRN 16919-18-9

CMF F6 P

CCI CCS

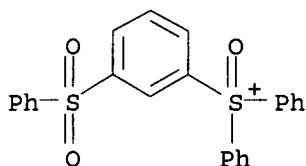




RN 139572-79-5 CAPLUS  
CN Sulfoxonium, diphenyl[3-(phenylsulfonyl)phenyl]-, hexafluorophosphate(1-)  
(9CI) (CA INDEX NAME)

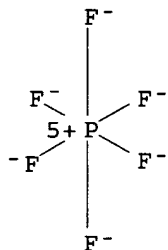
CM 1

CRN 139572-78-4  
CMF C24 H19 O3 S2



CM 2

CRN 16919-18-9  
CMF F6 P  
CCI CCS



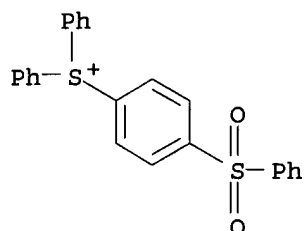
L3 ANSWER 8 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 1985:167245 CAPLUS  
DN 102:167245  
TI Recent advances in thermally and photochemically initiated cationic polymerization  
AU Crivello, James V.; Lee, J. L.  
CS Gen. Electr. Corp. Res. and Dev., Schenectady, NY, 12301, USA  
SO Polymer Journal (Tokyo, Japan) (1985), 17(1), 73-83  
CODEN: POLJB8; ISSN: 0032-3896  
DT Journal  
LA English  
AB Classes of arylsulfonium salts are discussed which have enhanced efficiency as photoinitiators or thermal initiators of cationic polymerization. One of these compds., p-PhSC<sub>6</sub>H<sub>4</sub>SPh<sub>2</sub>+AsF<sub>6</sub><sup>-</sup> [75482-17-6], was identified as a component of the Friedel-Crafts reaction of C<sub>6</sub>H<sub>6</sub> with S<sub>2</sub>Cl<sub>2</sub>. Similar compds., of formula ArSPh<sub>2</sub>+AsF<sub>6</sub><sup>-</sup> (e.g., Ar = p-PhOC<sub>6</sub>H<sub>4</sub>, m-PhSC<sub>6</sub>H<sub>4</sub>, and p-PhSO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>) and cyclic analogs (e.g., S-phenyldibenzothiophenium hexafluoroarsenate [82617-08-1]), were also prepared and characterized. Other classes (e.g., dialkylphenacylsulfonium salts, ArCOCH<sub>2</sub>SR<sub>2</sub>+X<sup>-</sup>) are also described; one class, characterized by 4-hydroxy-3,5-dimethoxyphenyldimethylsulfonium hexafluorophosphate [95896-72-3], is especially suited as thermal initiators. The activities of the initiators were tested in the cationic polymns. of limonene dioxide, cyclohexene oxide, and styrene oxide.  
IT 75482-29-0  
RL: USES (Uses)

(photoinitiators, for cationic polymerization of epoxides)

RN 75482-29-0 CAPLUS  
CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluoroarsenate(1-)  
(9CI) (CA INDEX NAME)

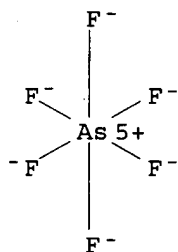
CM 1

CRN 47572-95-2  
CMF C24 H19 O2 S2



CM 2

CRN 16973-45-8  
CMF As F6  
CCI CCS



L3 ANSWER 9 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 1983:180499 CAPLUS  
DN 98:180499  
TI Triarylsulfonium salts  
IN Crivello, James V.; Lee, Julia L.  
PA General Electric Co., USA  
SO U.S., 8 pp. Cont.-in-part of U.S. Ser. No. 79,692, abandoned.  
CODEN: USXXAM  
DT Patent  
LA English  
FAN.CNT 2

|    | PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|----|-------------|------|----------|-----------------|----------|
| PI | US 4374066  | A    | 19830215 | US 1980-200769  | 19801027 |
|    | ZA 8005273  | A    | 19811125 | ZA 1980-5273    | 19800826 |
|    | GB 2061280  | A    | 19810513 | GB 1980-29024   | 19800909 |
|    | GB 2061280  | B2   | 19840516 |                 |          |
|    | CA 1120181  | A1   | 19820316 | CA 1980-361443  | 19800925 |
|    | FR 2466457  | A1   | 19810410 | FR 1980-20689   | 19800926 |
|    | FR 2466457  | B1   | 19850308 |                 |          |
|    | JP 56055420 | A2   | 19810516 | JP 1980-133103  | 19800926 |
|    | JP 63036332 | B4   | 19880720 |                 |          |
|    | ES 495420   | A1   | 19811016 | ES 1980-495420  | 19800926 |

|                    |    |          |               |          |
|--------------------|----|----------|---------------|----------|
| AU 8062780         | A1 | 19810409 | AU 1980-62780 | 19800929 |
| AU 539699          | B2 | 19841011 |               |          |
| BR 8006335         | A  | 19810414 | BR 1980-6335  | 19800929 |
| PRAI US 1979-79692 | A2 | 19790928 |               |          |

AB Triarylsulfonium salts such as I [75482-17-6] are prepared by a method based on the reaction of an aromatic hydrocarbon S2Cl2, and Cl in the presence of a Friedel-Crafts catalyst. The triarylsulfonium salts are used as cationic photoinitiators to effect the deep-section cure of organic resin compns. Thus, a mixture of Ph2S [139-66-2] 37.2, AlCl3 13.34, and Cl 9.5 parts was stirred and poured onto 500 parts ice. The semisolid was washed with H2O. Then 27.8 parts AsF6- K+ and 500 parts H2O were added to the residue and the mixture stirred at 30° for 1 h. The product was washed with H2O then with anhydrous Et2O and dried at 60° for 16 h. The product was then recrystd. from 95% EtOH to give 31% yield of I having m.p. 77-87°. Films from a 3% solution of I in 3,4-epoxycyclohexylmethyl 3',4'-epoxycyclohexane carboxylate [2386-87-0] were radiation-cured in 1 min to a maximum thickness of 50 mils, compared with 15 mils for a similar film containing Ph3S+ AsF6-.

IT 75482-29-0P  
 RL: PREP (Preparation)  
 (preparation of, as photoinitiators for deep cure of polymers)

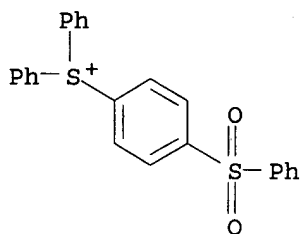
RN 75482-29-0 CAPLUS

CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluoroarsenate(1-)  
 (9CI) (CA INDEX NAME)

CM 1

CRN 47572-95-2

CMF C24 H19 O2 S2

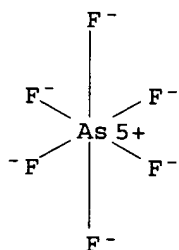


CM 2

CRN 16973-45-8

CMF As F6

CCI CCS



L3 ANSWER 10 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1981:516453 CAPLUS  
 DN 95:116453

TI Deep-setting photohardenable compositions  
 IN Crivello, James Vincent; Lam, Julia Hingwai  
 PA General Electric Co., USA  
 SO Ger. Offen., 23 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 2

|      | PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|------|---------------|------|----------|-----------------|----------|
| PI   | DE 3035807    | A1   | 19810409 | DE 1980-3035807 | 19800923 |
|      | DE 3035807    | C2   | 19930401 |                 |          |
|      | ZA 8005273    | A    | 19811125 | ZA 1980-5273    | 19800826 |
|      | GB 2061280    | A    | 19810513 | GB 1980-29024   | 19800909 |
|      | GB 2061280    | B2   | 19840516 |                 |          |
|      | CA 1120181    | A1   | 19820316 | CA 1980-361443  | 19800925 |
|      | FR 2466457    | A1   | 19810410 | FR 1980-20689   | 19800926 |
|      | FR 2466457    | B1   | 19850308 |                 |          |
|      | JP 56055420   | A2   | 19810516 | JP 1980-133103  | 19800926 |
|      | JP 63036332   | B4   | 19880720 |                 |          |
|      | ES 495420     | A1   | 19811016 | ES 1980-495420  | 19800926 |
|      | AU 8062780    | A1   | 19810409 | AU 1980-62780   | 19800929 |
|      | AU 539699     | B2   | 19841011 |                 |          |
|      | BR 8006335    | A    | 19810414 | BR 1980-6335    | 19800929 |
| PRAI | US 1979-79692 | A    | 19790928 |                 |          |

AB The sulfonium compds. 4-RC<sub>6</sub>H<sub>4</sub>S+Ph<sub>2</sub> AsF<sub>6</sub><sup>-</sup> (R = PhS, PhSO, or PhSO<sub>2</sub>) and 4-(PhS)C<sub>6</sub>H<sub>4</sub>S+Ph<sub>2</sub> PF<sub>6</sub><sup>-</sup> [75482-18-7] are useful as initiators for the polymerization of photohardenable epoxy, phenolic, vinyl, and other compds. Thus, Ph<sub>2</sub>S [139-66-2] was treated with Cl in the presence of AlCl<sub>3</sub>, and the reaction product was treated with KAsF<sub>6</sub> [17029-22-0] to prepare 4-(PhS)C<sub>6</sub>H<sub>4</sub>S+Ph<sub>2</sub> AsF<sub>6</sub><sup>-</sup> (I) [75482-17-6]. A 3% solution containing 3,4-epoxycyclohexylmethyl 3,4-epoxycyclohexanecarboxylate (II) and I was hardened by UV light as a 1270-μ layer. With Ph<sub>3</sub>S<sup>+</sup> AsF<sub>6</sub><sup>-</sup> as the initiator instead of I, the maximum thickness of II for satisfactory hardening was 254-381 μ.

IT 75482-29-0  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for photopolymer. and photocrosslinking)

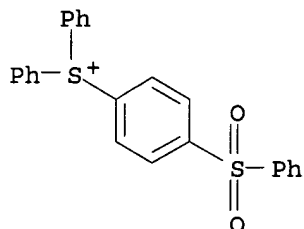
RN 75482-29-0 CAPLUS

CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluoroarsenate(1-)  
 (9CI) (CA INDEX NAME)

CM 1

CRN 47572-95-2

CMF C24 H19 O2 S2

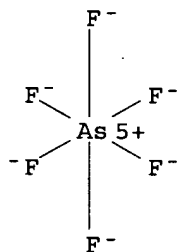


CM 2

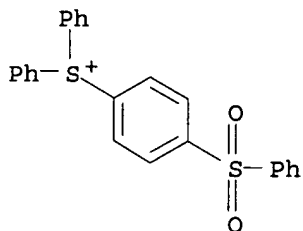
CRN 16973-45-8

CMF As F6

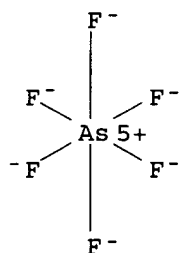
CCI CCS



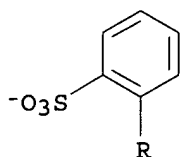
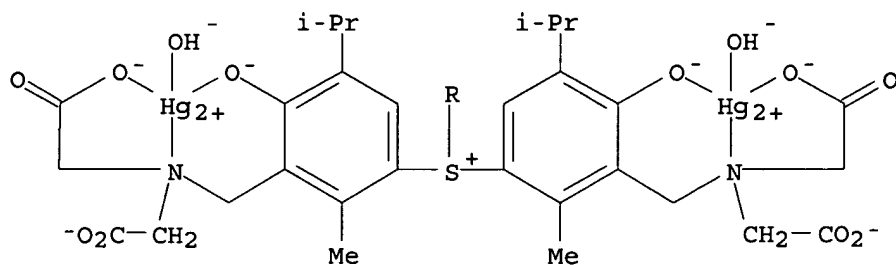
L3 ANSWER 11 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1980:605102 CAPLUS  
 DN 93:205102  
 TI Complex triarylsulfonium salt photoinitiators. II. The preparation of several new complex triarylsulfonium salts and the influence of their structure in photoinitiated cationic polymerization  
 AU Crivello, J. V.; Lam, J. H. W.  
 CS Gen. Electr. Corp. Res. Dev. Cent., Schenectady, NY, 12301, USA  
 SO Journal of Polymer Science, Polymer Chemistry Edition (1980), 18(8), 2697-714  
 CODEN: JPLCAT; ISSN: 0449-296X  
 DT Journal  
 LA English  
 AB Complex triarylsulfonium salts containing thiophenoxy chromophores were prepared  
 The effects of the position of the thiophenoxy group on the rate of photolysis and on the photoinitiated cationic polymerization of various monomers were investigated. Salts in which the thiophenoxy group was oxidized to the sulfoxide and the sulfone also were prepared to examine the effects of the oxidation state of the S-bearing chromophore on the efficiencies in photoinitiated cationic polymerization All complex salts having extended conjugation not impeded by positional isomerization or blocked by oxidation of the thiophenoxy group are more reactive than the corresponding triphenylsulfonium salts in cationic polymerization  
 IT 75482-29-0  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, for cationic photochem. polymerization)  
 RN 75482-29-0 CAPLUS  
 CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, hexafluoroarsenate(1-)  
 (9CI) (CA INDEX NAME)  
 CM 1  
 CRN 47572-95-2  
 CMF C24 H19 O2 S2



CRN 16973-45-8  
CMF As F6  
CCI CCS

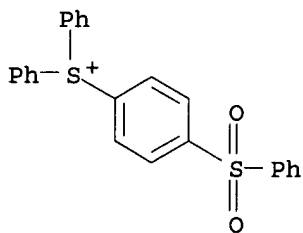


L3 ANSWER 12 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 1972:145595 CAPLUS  
DN 76:145595  
TI Spectrophotometric study of the complexing of mercury(II) with some  
phthalexons. 2. Complexing of mercury(II) with thymolphthalexons-S  
AU Cherkesov, A. I.; Tonkoshkurov, V. S.; Postoronko, A. I.  
CS USSR  
SO Ftaleksong (1970) 143-50  
From: Ref. Zh., Khim. 1971, Abstr. No. 6G11  
DT Journal  
LA Russian  
AB Complexing of Hg<sup>2+</sup> with Thymolphthalexon S [disodium salt of  
3,3'-bis-[di-(carboxymethyl)]aminomethylthymol-sulfophthalein] (I) (a  
component of Methylthymol Blue) was studied. The color reaction of Hg<sup>2+</sup>  
with I occurred at pH 3.7-6.5 (optimally at pH 6.0-6.5). The absorption  
maximum of the complex was at 610 nm (the molar absorptivity was 2.7 +  
104). The complex had a 2:1 Hg-I ratio, and the formation constant was 2.54  
+ 1010.  
IT 36490-83-2  
RL: PRP (Properties); FORM (Formation, nonpreparative)  
(formation consts. of)  
RN 36490-83-2 CAPLUS  
CN Mercurate(4-), [ $\mu$ -[bis[3-[[bis(carboxymethyl)amino]methyl]-4-hydroxy-2-  
methyl-5-(1-methylethyl)phenyl](2-sulfophenyl)sulfoniumato(9-  
)]][dihydroxydi-, tetrahydrogen (9CI) (CA INDEX NAME)



● 4 H<sup>+</sup>

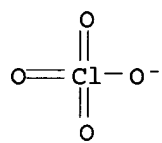
L3 ANSWER 13 OF 13 CAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1972:85504 CAPLUS  
 DN 76:85504  
 TI Electrochemistry of organic sulfur compounds. III. Novel anodic  
 synthesis of a sulfonium salt from diphenyl sulfide  
 AU Uneyama, Kenji; Torii, Sigeru  
 CS Sch. Eng., Okayama Univ., Okayama, Japan  
 SO Journal of Organic Chemistry (1972), 37(3), 367-9  
 CODEN: JOCEAH; ISSN: 0022-3263  
 DT Journal  
 LA English  
 AB Ph<sub>2</sub>S, dissolved in MeCN containing LiClO<sub>4</sub>, was electrolyzed at 30° to  
 give diphenyl [p-(phenylthio)phenyl] sulfonium (I), Ph<sub>2</sub>SO, and  
 1,4-bis(phenylthio)benzene. Sulfonium salt I predominated in the absence  
 of water, while Ph<sub>2</sub>SO increased as the concentration of H<sub>2</sub>O was raised.  
 IT 32958-91-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of)  
 RN 32958-91-1 CAPLUS  
 CN Sulfonium, diphenyl[4-(phenylsulfonyl)phenyl]-, perchlorate (9CI) (CA  
 INDEX NAME)  
 CM 1  
 CRN 47572-95-2  
 CMF C24 H19 O2 S2



CM 2

CRN 14797-73-0

CMF Cl O4



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